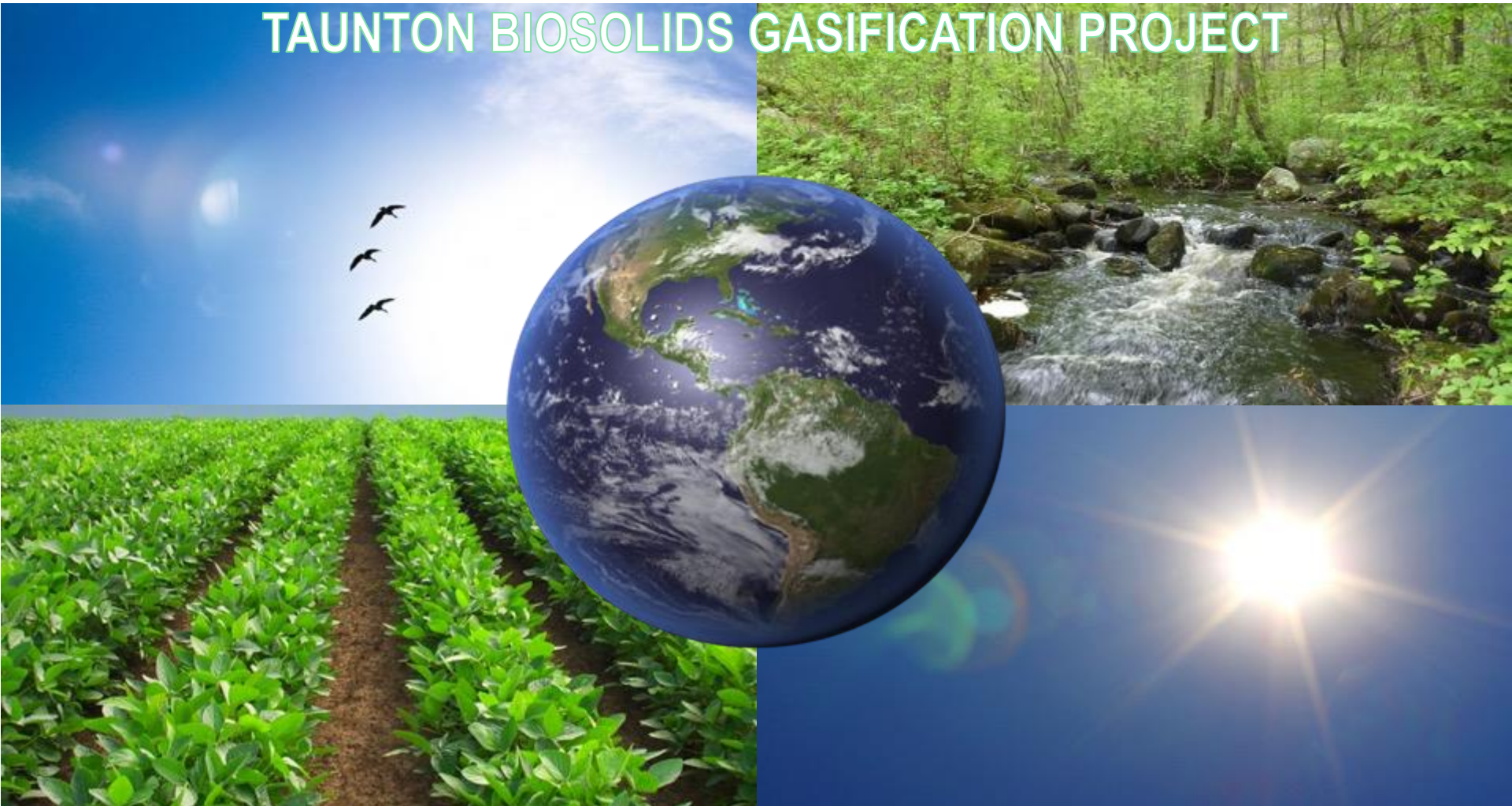




ARIES CLEAN TECHNOLOGIES

TAUNTON BIOSOLIDS GASIFICATION PROJECT



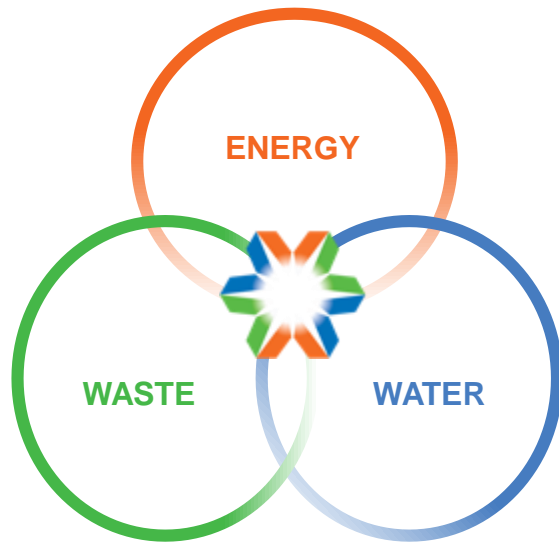
**Presentation to Taunton City Council
February 9, 2021**



Executive Summary – Aries Biosolids Gasification Project

Aries Clean Technologies

Based in Nashville, Tennessee, **Aries Clean Technologies** is a patent holder, manufacturer and system integrator that develops projects using its **proven, proprietary downdraft and fluidized bed gasification systems for municipal and industrial customers**. Since 2010, Aries has been gasifying materials such as biosolids that would otherwise be landfilled while producing renewable and sustainable energy.



- Closed loop energy neutral system
- 95% volumetric reduction of biosolids
- Sustainable long-term solution
- Reduces land application and incineration
- No odors from facility
- PFAS solution



- Sustainable zero landfill solution
- Carbon neutral to negative
- Reduces biosolids hauling, reduces CO2 emissions
- Gasifier air emissions expected to be lower than existing SSI's in MA



- System produces clean, renewable heat energy from synthesis gas
- System produces a valuable biochar product that replaces coal fly ash in concrete applications

- Facility will be owned/operated by Aries
- Aries has 10+ years of technology development and operating history
- Full-scale commercial facility constructed and operating
- Fluidized bed gasifier -18 months of commercial operation
- Feedstock includes wood waste, biosolids, and agricultural waste
- Small/medium capital requirement that can be project financed
- Robust near-term project pipeline
- Experienced team with an average of 30 years in clean technology and energy



Lebanon, TN

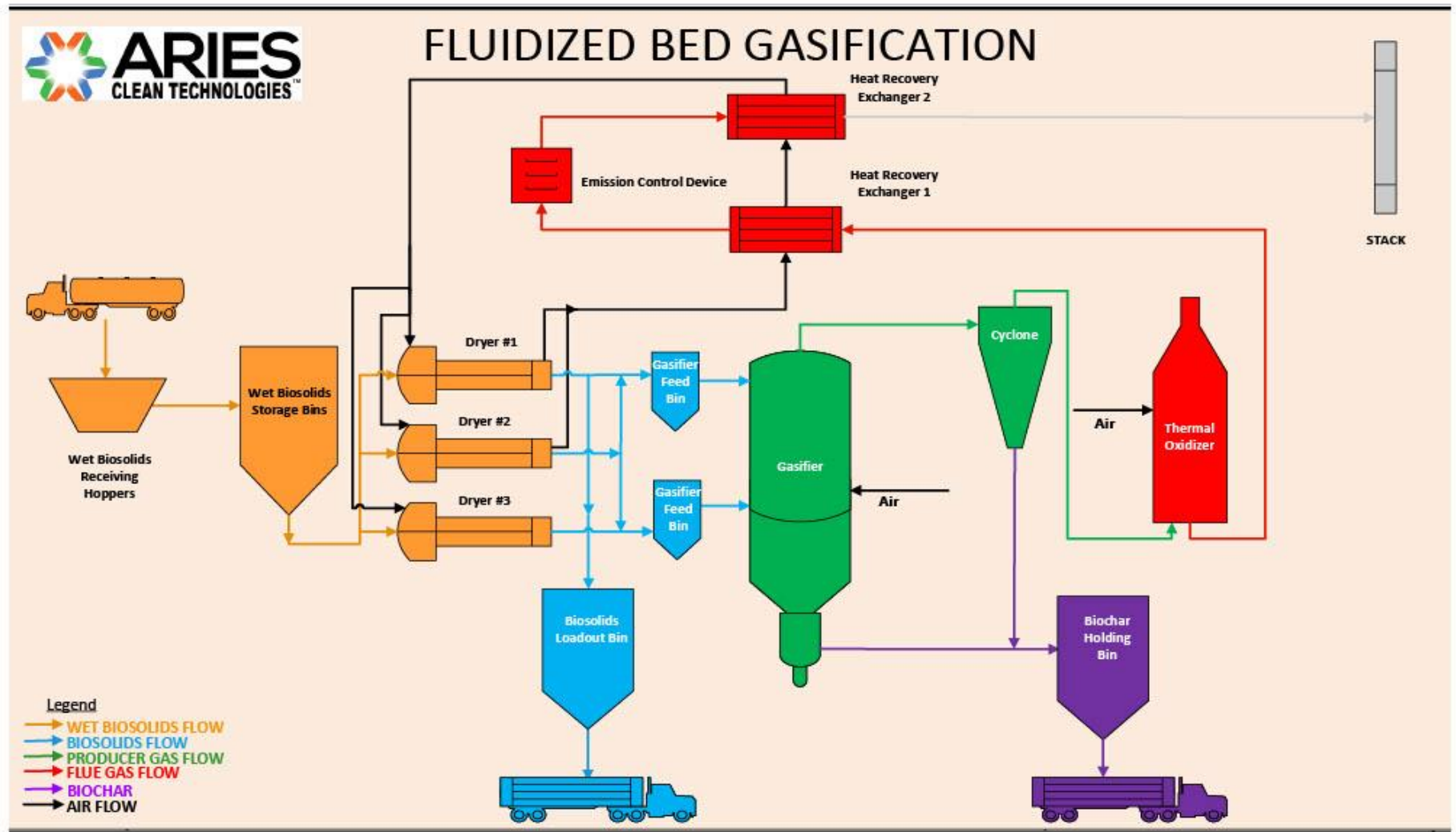


Sanford, FL

Aries Facility- System Description

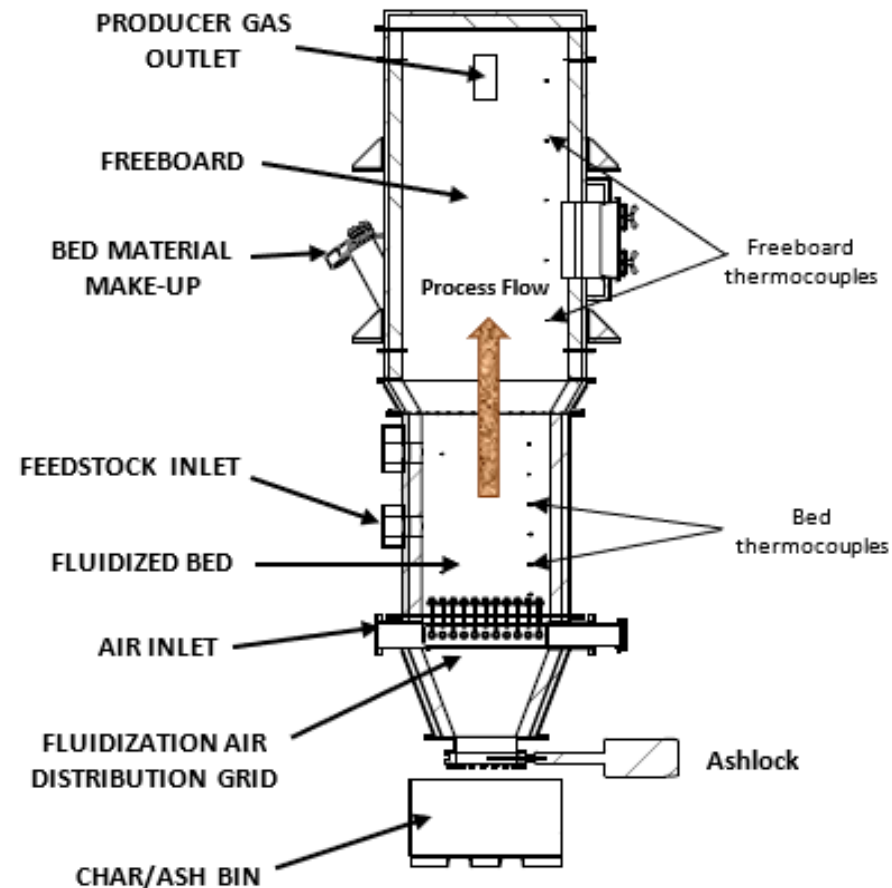
- 470 TPD Throughput
- 3 x 235 TPD Biosolids Dryers
- Dryers produce Class A/Type I Biosolids used as Gasifier Feedstock
- 100 TPD Aries Patented Fluidized Bed Gasifier
- 25 TPD of Biochar Produced
- Heat Recovery
- Air Quality Control Equipment
- Noise and Odor Control Systems

Process Flow Diagram

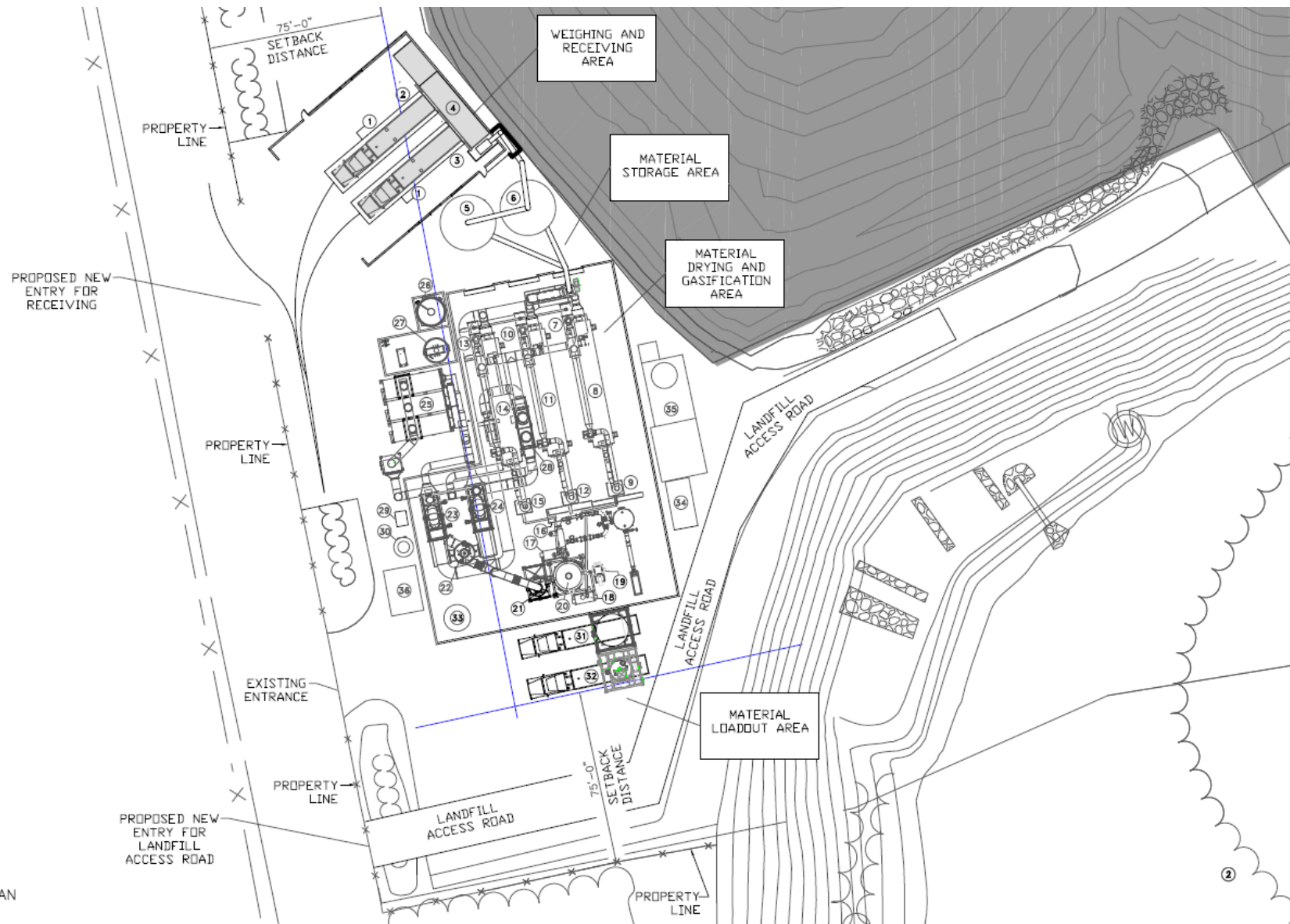


Fluidized Bed Gasification –Cutting Edge Technology

- Conversion of biomass into a synthesis gas (syngas) in an oxygen-starved environment
- Thermo-chemical process
 - Heat generated through chemical reactions of biosolids and air
 - Bed temperature constant at 1,250°F through control of biosolids to air ratio
 - Self sustaining chemical reactions
 - Producer gas is primarily H_2 , CO , CH_4 and CO_2
 - Controlled amount of air enters the gasifier so no combustion occurs in the gasifier- no potential for fires/explosions
 - Process does not require supplemental energy other than startup.



Aries Taunton – Project Site



AN

Aries Taunton Facility Rendering



Aries Taunton Facility Rendering



Aries Taunton Facility Rendering



Aries Project – Environmental Protection Features

- State-of-the-art odor control design
 - Totally enclosed biosolids receiving building under negative air pressure
 - Thermal oxidizer will destroy all VOC's/odor compounds
 - Biosolids delivery vehicles will be watertight and covered
 - No liquid biosolids will be accepted
- State-of-the-art air quality control system
- Highly reduced truck traffic vs. landfill (20 trucks/day)
- No land disposal/no environmental impact on existing landfill
- No water quality impacts
- State-of-the-art noise reduction

Major Project Milestones

- Site Option Agreement Signed December 2020
- Execute Biosolids Supply Agreement – February 2020
- Sign Host Community Agreement – February 2020
- MEPA Approval: 9-12 months
- MassDEP Regulatory Permitting: 6-9 months
- Financial Close – Q2 2022
- Construction – Q2/Q3 2022
- Commercial Operations – Q2/Q3 2023

Aries Project Benefits to Taunton

- \$750,000 upfront payment to City
- \$500,000 sewer I&I upfront payment to City
- \$100,000 annual escalating lease payment
- Annual tip fee revenue share of 3.9%, worth an estimated \$460,000 per year
- Most favored nation biosolids disposal pricing for City saving \$300,000 per year
- Relocation of landfill residential recycling drop-off area at no cost to City
- Productive use of difficult-to-develop site
- Safe/sustainable long-term biosolids solution
- 30 permanent well-paying jobs
- Purchases from local businesses by Aries

Aries Taunton – Host Benefits Compared to Personal Property Taxes

CITY OF TAUNTON PROPOSAL VALUATION

WACC 8.5%

Aries Proposal	Project Close	Year 1	Year 5	Year 10	Year 15	Year 20
Fee at Close	\$ 750,000					
Site Lease	\$ 100,000	\$ 101,500	\$ 107,728	\$ 116,054	\$ 125,023	\$ 134,686
Disposal Cost Savings		\$ 225,000	\$ 331,224	\$ 365,698	\$ 403,761	\$ 445,784
Sewer Infiltration & Inflow Fee	\$ 500,000					
Community Fee		287,303	490,893	530,251	569,701	613,730
Total Fees & Cost Savings	\$ 1,350,000	\$ 613,803	\$ 929,845	\$ 1,012,003	\$ 1,098,485	\$ 1,194,199

Net Present Value **\$10,602,368**

Personal Property Tax*	Project Close	Year 1	Year 5	Year 10	Year 15	Year 20
PPE, Gross		29,151,064	33,453,656	33,453,656	33,453,656	33,453,656
Accumulated Depreciation***		(728,777)	(7,311,943)	(15,675,357)	(24,038,771)	(32,402,185)
PPE, Net		28,422,288	26,141,713	17,778,299	9,414,885	1,051,471
Personal Property Tax		937,935	862,677	586,684	310,691	34,699
Sewer Infiltration & Inflow Fee	\$ 500,000					
Total Fees	\$ 500,000	\$ 937,935	\$ 862,677	\$ 586,684	\$ 310,691	\$ 34,699

Net Present Value **\$7,014,862**

Aries Taunton – Host Benefits Compared to Taxes on Building Only

CITY OF TAUNTON PROPOSAL VALUATION

WACC 8.5%

Aries Proposal	Project Close	Year 1	Year 5	Year 10	Year 15	Year 20
Fee at Close	\$ 750,000					
Site Lease	\$ 100,000	\$ 101,500	\$ 107,728	\$ 116,054	\$ 125,023	\$ 134,686
Disposal Cost Savings		\$ 225,000	\$ 331,224	\$ 365,698	\$ 403,761	\$ 445,784
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Total Fees & Cost Savings	\$ 1,350,000	\$ 613,803	\$ 929,845	\$ 1,012,003	\$ 1,098,485	\$ 1,194,199
Net Present Value	\$10,602,368					

Personal Property Tax**	Project Close	Year 1	Year 5	Year 10	Year 15	Year 20
PPE Building Gross		11,940,698	11,940,698	11,940,698	11,940,698	11,940,698
Accumulated Depreciation***		(298,517)	(2,686,657)	(5,671,832)	(8,657,006)	(11,642,181)
PPE Building, Net		11,642,181	9,254,041	6,268,866	3,283,692	298,517
Personal Property Tax		384,192	305,383	206,873	108,362	9,851
Sewer Infiltration & Inflow Fee	\$ 500,000					
Total Fees	\$ 500,000	\$ 384,192	\$ 305,383	\$ 206,873	\$ 108,362	\$ 9,851
Net Present Value	\$2,849,261					

Aries Taunton Permitting Underway

- Executed Site Option Agreement with City
- MEPA Process Underway
 - Environmental Notification Form filed
 - Noise study
 - Air modeling
 - Traffic study
 - Public outreach/public comments on project
 - Final Environmental Impact Report will mitigate any potential impacts
- Air, water, solid waste permits obtained after MEPA Process
- Local site plan approval/building permits
- Aries is committed to being a good long-term neighbor in Taunton

THANK YOU

